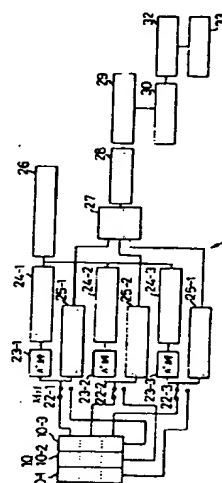


**(54) ULTRASONIC DIAGNOSTIC SYSTEM**

(11) 5-115483 (A) (43) 14.5.1993 (19) JP  
 (21) Appl. No. 3-285099 (22) 30.10.1991  
 (71) TOSHIBA CORP (72) KINYA TAKAMIZAWA  
 (51) Int. Cl.<sup>5</sup> A61B8/14, G01N29/06, G01N29/22

**PURPOSE:** To provide an image processor having a sufficient resolution by executing not only a beam convergence in the scanning direction but also a beam convergence in the direction being vertical to the scanning direction.

**CONSTITUTION:** In the ultrasonic diagnostic system which is provided with transmitting circuits 23, 24 for generating an ultrasonic wave by driving an ultrasonic probe consisting of an ultrasonic vibrator 10, a receiving circuit 25 for receiving an electronic signal from the vibrator 10, and display means 28-33 for displaying an output signal of the receiving circuit 25 as an ultrasonic image, and scans electronically at least two cross sections by the vibrator 10, the ultrasonic vibrator 10 is provided with an acoustic lens (not shown in the figure) whose thickness is not uniform. Also, a beam convergence in the scanning direction is executed by the acoustic lens and one of a transmitting delay circuit 24 and a receiving delay circuit 25 or a transmitting delay circuit 14 or a receiving delay circuit 25.



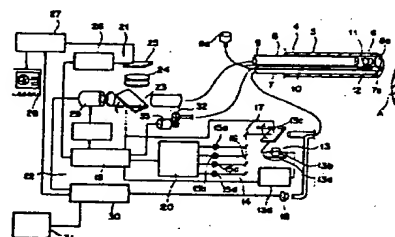
22-1: switch, 23-1,23-2,23-3: pulser, 24-1,24-2,24-3: transmitting delay circuit, 25-1,25-2,25-3: receiving delay circuit, 26: repeat pulse generator, 27: adder, 28: logarithmic converter, 29: envelope detecting circuit, 30: A/D converter, 32: image memory, 33: television monitor

**(54) ENDOSCOPIC DEVICE**

(11) 5-115484 (A) (43) 14.5.1993 (19) JP  
 (21) Appl. No. 3-279062 (22) 25.10.1991  
 (71) OLYMPUS OPTICAL CO LTD (72) MAMORU KANEKO(9)  
 (51) Int. Cl.<sup>5</sup> A61B10/00, A61B1/00, A61B5/14

**PURPOSE:** To provide the endoscopic device having a metabolic information measuring means which can make observation and the measurement of the metabolic information of a biotissue by one endoscope.

**CONSTITUTION:** A xenon lamp 13b which generates illuminating diagnostic light for illuminating of a testee body A and an inspecting light source 14 which generates the inspecting light for measuring the metabolic information of the tissue of the testee body A are provided. A light guide fiber 7 which can irradiate the testee body A with the illumination of diagnostic light and the inspecting light and an image guide fiber 8 which can receive the illuminated diagnostic light and the inspecting light are provided in the endoscope 4. The image of the testee body is reproduced by a CCD image pickup element 25 and the testee body A is irradiated with the inspecting light from the inspection light source 14 at need, by which the metabolic information of the tissue is measured.

**(54) OPTICAL MEASURING INSTRUMENT FOR LIVING BODY**

(11) 5-115485 (A) (43) 14.5.1993 (19) JP  
 (21) Appl. No. 3-279261 (22) 25.10.1991  
 (71) HITACHI LTD (72) YUICHI YAMASHITA(1)  
 (51) Int. Cl.<sup>5</sup> A61B10/00, A61B6/03, G01N21/17

**PURPOSE:** To provide the instrument which can make the measurement at the plural detecting sections of a living body efficiently in time with an optical CT device which images the function measurement of the living body by using light.

**CONSTITUTION:** The incident position of a testee body 5 selected by a multiinput/multioutput optical switch 3 is irradiated with the light from a light source section 1 including plural wavelengths. The light past the testee body 5 is captured by an optical fiber from the plural sections and again pass the optical switch 3. This light is introduced from the optical fiber 6-1 by 6-m into a detecting section 7. A distribution is previously applied to the optical path length from the optical fiber 6-1 to 6-m at this time.

